TABLE 2.—*Vapor pressures at pyrheliometric stations on days when solar radiation intensities were measured.*

Washington, D. C.			Madison, Wis.			Lincoln, Nebr.			Santa Fe, N. Mex.		
Dates.	A. M.	P. M.	Dates.	A. M.	P. M.	Dates.	A. M.	P. M.	Dates.	A. M.	P. M.
1917.	*mm.*	*mm.*	1917.	*mm.*	*mm.*	1917.	*mm.*	*mm.*	1917.	*mm.*	*mm.*
June 4	7.57	9.83	June 8	8.81	10.59	June 6	7.29	7.87	June 5	3.00	2.62
8	13.13	10.97	11	10.21	5.11	7	7.87	10.21	6	3.30	1.96
9	12.68	15.11	12	14.10	17.37	10	10.59	15.11	7	2.62	1.96
14	17.37	15.11	13	9.47	9.47	11	15.65	10.21	8	3.00	3.45
15	10.59	10.59	16	7.04	9.47	13	8.81	7.29	9	5.16	3.00
16	8.48	8.18	19	9.83	10.59	14	6.02	8.18	11	2.62	1.88
17	8.18	10.59	20	9.47	11.38	19	8.81	10.97	12	3.30	1.68
18	9.47	11.38	29	12.24	12.24	21	11.38	11.38	13	3.15	4.37
19	10.97	13.13	.....	.....	.....	23	12.24	13.61	14	3.81	4.57
20	13.61	15.65	.....	.....	.....	29	15.65	16.79	20	5.36	2.62
21	13.61	13.13	.....	.....	.....	30	12.24	16.20	29	6.76	4.57
22	12.24	15.65	.....	.....	.....	.....	.....	.....	.....	.....	.....
25	16.20	10.97	.....	.....	.....	.....	.....	.....	.....	.....	.....
30	12.68	13.13	.....	.....	.....	.....	.....	.....	.....	.....	.....

TABLE 3.—*Daily totals and departures of solar and sky radiation during June, 1917.*

[Gram-calories per square centimeter of horizontal surface.]

Day of month.	Daily totals.		Departures from normal.		Excess or deficiency since first of month.	
	Washington.	Madison.	Washington.	Madison.	Washington.	Madison.
1917.	*calories.*	*calories.*	*calories.*	*calories.*	*calories.*	*calories.*
June 1	527	327	37	−159	37	−159
2	498	55	8	−433	45	−592
3	632	657	143	167	188	−425
4	701	227	212	−265	400	−690
5	479	165	−10	−329	390	−1,019
6	386	158	−104	−339	286	−1,358
7	314	152	−178	−347	108	−1,705
8	420	697	−74	195	34	−1,510
9	621	611	124	106	158	−1,404
10	303	661	−196	153	−38	−1,251
11	204	561	−297	51	−335	−1,200
12	482	681	−22	168	−357	−1,032
13	449	459	−57	−57	−414	−1,089
14	350	310	−158	−209	−572	−1,298
15	299	534	−211	12	−783	−1,286
16	530	709	18	245	−765	−1,041
17	727	663	213	136	−552	−905
18	682	500	167	−30	−385	−935
19	666	582	149	49	−236	−886
20	533	720	14	185	−222	−701
Decade departure					−184	550
21	519	588	−1	50	−223	−651
22	611	309	89	−232	−134	−883
23	475	221	−49	−323	−183	−1,206
24	596	408	71	−138	−112	−1,344
25	701	340	175	−207	63	−1,551
26	599	661	73	114	136	−1,437
27	486	370	−39	−178	97	−1,615
28	512	146	−13	−402	84	−2,017
29	393	714	−131	166	−47	−1,851
30	637	374	113	−174	66	−2,025
Decade departure					288	−1,324
Excess or deficiency since first of year. gr.-cal					−2,475	+147
Excess or deficiency since first of year. per cent					−3.7	+0.2

551.593

PECULIAR STREAK IN LINE WITH KITE WIRE.

By BERTRAM J. SHERRY, Meteorologist.

[Weather Bureau Aerological Station, Drexel, Nebr., July 19, 1917.]

During the Weather Bureau kite flight of July 9, 1917, at Drexel, Nebr., while 4 kites were in the air flying tandem on 7,200 feet of wire, there appeared suddenly in the sky, outlined against an irregular, circular patch of what was thought to be cirrus clouds, a clear, blue streak, apparently a rift in the clouds, directly in line, but evidently beyond the kite wire. This streak appeared to stand vertically in the sky due south of the station. It was ¼° wide and 15° long, extending from 30° to 45° elevation. The streak appeared suddenly at 9:15 a. m.; it was seen by the writer, who called the other two men, then in the reel shelter, to witness the phenomenon. The streak, as it was observed, appeared to be along the kite wire; but as it is believed that the clouds were much higher than the kite wire at this time, and as the streak appeared to divide the clouds, there is some question as to whether it was caused by reflection of light from the kite wire, or from some electrical effect of the wire that caused the clouds to dissipate. The streak was clearly visible and well defined. At 9:16 a. m. the streak lost its clean-cut appearance, changing gradually into a zigzagged path through the clouds, and at 9:17 a. m. it had disappeared. At 9:18 a. m. the patch of clouds had dissipated. The sun was shining brightly all of the time the streak was observed, being 45° high and 75° to the left of the position of the streak. The head kite was flying at an angle of 57° above the horizon when the streak was observed and was approximately 5,800 feet above the ground. The electrical potential on the kite wire, due to atmospheric electricity, was 750 volts at 9:16 a. m., which later decreased.

On only two other occasions during the writer's experience of eight years in kite flying, streaks similar to the one described above have been observed. At Mount Weather, Va., on December 11, 1908, the following note was made concerning the flight made on that day:

> A few minutes after the head kite had disappeared in the clouds a long white streak of light was visible directly in line with the kite wire. The streak of light was probably 1,500 feet long. The kite wire was very heavily charged with electricity. The light streak remained visible for a few minutes, then gradually became zigzagged, and faded from sight. About five minutes later the head kite broke away. The clouds were broken stratus when the streak was first observed, but as the streak faded the clouds became an unbroken mass of stratus, and just before the kite broke away the electric charge on the kite wire vanished.

On January 2, 1909, at Mount Weather, Va., the following note regarding the flight of that day was made:

> While reeling in, and while the head kite was in thin strato-cumulus clouds, a long streak of light, extending from the head kite to the second kite, was visible for about one minute. The wire seemed to dissipate the clouds immediately surrounding it. These clouds were about a mile high.

On each occasion when these streaks were observed they were witnessed by at least two persons whose impressions were essentially the same as those given above. In the cases observed at Mount Weather the streaks seemed to be caused by some influence of the kite wire dissipating the clouds immediately surrounding it, while at Drexel this was not so plainly indicated and it seemed possible that the streak might be due to the reflection of light by the kite wire.

The streaks observed in each instance seemed to be about the same length, about the same height above the ground, to appear as a clean cut streak ¼° wide and 15° long, to last about a minute, then to become zigzagged, and later to fade gradually from view. In the two cases at Mount Weather there is no question but that the kite wire was actually in the clouds, and in those instances the streak was a light streak in a dark colored cloud, while in the case at Drexel it is believed that the kite wire was not as high as the clouds, the clouds were much thinner than in the other cases, and the streak appeared as a well-defined, straight path of blue sky in a light colored cloud.

REMARKS ON ABOVE PHENOMENON.

It seems likely that the surface tension of the liquid cloud particles near the electrically-charged kite wire is weakened and that, depending on the air temperature, evaporation or freezing of these particles results. It is probable that crystallization resulted in the two cases

observed at Mount Weather and that evaporation resulted in the case observed at Drexel. This would account for the "white streaks" in the first two cases and for the "blue streaks" in the third. These observations are based on the assumption that at Drexel, as at Mount Weather, the kite wire was in the clouds.— *Wm. R. Blair.*

THE WORLD'S AIR ROUTES AND THEIR REGULATION.

[*Reprinted from* Nature, London, June 28, 1917, 99:349-350.]

On June 20 Lord Montagu of Beaulieu, gave an interesting lecture before the Aeronautical Society of Great Britain on the world's air routes and their regulation. He pointed out how favorably placed the British Empire was in this matter, inasmuch as its many possessions were so scattered about the globe that suitable landing and halting places could be provided without the necessity of asking for concessions from other nations. Lord Montagu based his calculations on an assumed speed of 120 miles an hour, and showed that with two 5-hour periods per day the journey to India could be accomplished in four days.

Under the stage which aeroplanes have now reached, the carriage of mails and passengers to India seems quite a feasible proposition; the meteorological conditions along the tracks that might be followed, except at the British end in winter, are quite good. Crossing the Atlantic is another matter, specially from Europe to America; the shortest track, from Ireland to Newfoundland, is in the winter a region of gales, mostly from some westerly point, and if the more favorable weather that prevails farther south is sought, the distance is about doubled. Lord Montagu's suggestion is that certain levels be assigned to certain types of traffic, but it has been estimated that at any given time one-half of the earth is covered with clouds, and a pilot above a sheet of clouds can not keep his course, as there is nothing to tell him the strength and direction of the air drift to which he is exposed. It follows, therefore, that a pilot aiming at a definite place must fly low enough to see the earth at frequent intervals; in or above a cloud sheet he would have no horizon and could not rely on astronomical observations for his position. Thus the traffic to which the highest levels were assigned would be at a great disadvantage.